IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: **TODA, Yasunori** Group Art Unit: **3721**

Serial No.: **09/987,901** Examiner: **HARMON, CHRISTOPHER**

Filed: **November 16, 2001** Confirmation No.: **7804**

For: **CONTINUOUS MEDIUM FOLDING DEVICE AND CONTINUOUS MEDIUM PRINTING APPARATUS HAVING THEREOF**

Attorney Docket No.: 011543
Customer Number: 38834

APPEAL BRIEF

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

April 19, 2005

Sir:

This Appeal Brief follows from the Notice of Appeal filed January 24, 2005.

I. REAL PARTY IN INTEREST

The Real Party in Interest is Fuji Xerox Co., Ltd., with a mailing address of 17-22 Akasaka, 2-Chome, Minato-ku, Tokyo, Japan.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1 – 7 remain pending in the present application. Claim 2 is allowed. Claims 1 and 3 – 7 stand rejected. The Applicants appeal the final rejection of claims 3 – 7 set forth in the Office Action mailed on September 23, 2004.

IV. STATUS OF AMENDMENTS

No claim amendments were made in the response after final filed December 20, 2004. The claims stand as presented in the Amendment under 37 C.F.R. §1.111 filed on August 4, 2004.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a continuous medium folding device and continuous medium printing apparatus in which a swing arm, pivotable about an axis on one end, guides the continuous medium for accordion-folding. The swing arm has a telescopic structure that varies in length to at least two different lengths during a swing of the swing arm (*see, e.g.*, page 4, lines 27-35; page 9, lines 27-37). This variable length swing arm allows the distance from tip of the swing arm to the top surface of the continuous medium to remain small to fold the continuous medium in a stable manner (*see, e.g.*, page 9, lines 20-27). Annotated claims 1, 5 and 6 are provided below for example purposes only.

Claim 1 : A device for folding a continuous medium, the device comprising:

a swing arm **{*e.g*, 91}** pivotable about an axis at one end of said swing arm, said continuous medium being guided by said swing arm and accordion-folded with equal widths as a result of a swinging operation of said swing arm **{*see, e.g*, Figs. 14A-D}**,

wherein said swing arm includes a telescopic structure varying the length of said swing arm to at least two different lengths in a swing of said swing arm **{*see, e.g.*, Figs. 10-12; page 9, lines 27-37}**.

Claim 5: The device as claimed in claim 1, further comprising:

a table **{*e.g*, 68}** for receiving said folded continuous medium fed via said swing arm, said table being vertically movable **{*see, e.g*, Figs. 19C & D; page 22, lines 4-9}**;

an error detection mechanism for detecting any fold error of said continuous medium **{e.g, Fig. 4, control circuit 170, distance measuring sensors 151, 152, distance sensor circuit 154; page 21, lines 21-30}**; and

control means for recovering said device from said fold error in such a manner that, upon detection of a fold error, the swinging of said swing arm is stopped, said table is descended through a predetermined distance and then said table is ascended back to its original level **{e.g, Fig. 4, control circuit 170; page 21, line 31 to page 22, line 19}**.

Claim 6: A continuous medium printing apparatus provided with a device for folding a continuous medium, said device comprising:

a swing arm **{*e.g*, 91}** being pivotable about an axis at one end of said swing arm, said continuous medium being guided by said swing arm and accordion-folded with equal widths as a result of the swinging operation of said swing arm **{*see, e.g*, Figs. 14A-D}**, and

wherein said swing arm includes a telescopic structure such that the length of said swing arm is changed to have at least two different lengths in a swing of said swing arm **{*see, e.g.*, Figs. 10-12; page 9, lines 27-37}**.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1 – 3 and 7 are unpatentable under 35 U.S.C. §103 over **Muller et al.** (USP 4,597,752), in view of **Martin et al.** (USP 5,062,597).

VII. ARGUMENT

A. An Improper Standard For Determining Obviousness Was Used.

In the Advisory Action dated January 14, 2005, it was stated that "[t]he modification of swinging the telescoping arm of Muller and varying the length is considered consistent with the teachings of Muller in that it would maintain a uniform gap between the stack and the end of the arm." The Advisory Action goes on to state, "[t]he structured elements of the combination of Mueller [sic] and Martin et al. would be fully capable to perform the recited function."

However, the test for obviousness is not whether the alleged modification would be consistent with a cited reference's teachings. The test for obviousness is also not whether the cited prior art is "capable" of performing the claimed elements. The mere fact that the prior art

could be modified would not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Laskowski*, 871 F.2d 115, 117, 10 USPQ2d 1397, 1398 (Fed. Cir. 1989). To prevent hindsight, especially when relatively simple art is involved, the tests for whether to combine references need to be applied rigorously, and the showing of a motivation to combine must be clear and particular. *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999); *accord, Ruiz v. A.B. Chance Co.*, 234 F.3d 1339, 56 USPQ2d 1641 (Fed. Cir. 2000); *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 60 USPQ2d 1001 (Fed. Cir. 2001). To satisfy this requirement, and to guard against hindsight, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination ***in the manner claimed***. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998).

The examiner has not provided a clear and particular showing of why the skilled artisan would select elements from **Muller** and **Martin** for combination in the specific manner being claimed, without the use of hindsight. The Advisory Action stated that an objective of **Muller** is to "maintain a uniform gap between the stack and the end of the arm." However, as stated on page 2 of the final Office Action, "**Muller et al.** does not directly disclose horizontal or swinging of arm 102." Indeed, **Muller**'s guide means 102 is ***fixed*** in a ***vertical*** position. Nothing in **Muller** addresses the problems of stacking when a swinging arm is involved. The further reference to **Martin** was made for its disclosure of a swinging arm. However, **Martin** does not use a swinging arm having a telescopic structure that varies in length. Instead, **Martin** actually

teaches away from a telescopic arm structure by its use of rotating brushes to manipulate folds in the stacking paper (discussed in the next section). Page 3 of the final Office Action cites the general proposition that "both Muller and Martin et al. are concerned with stacking folded products" as the basis for motivation to combine, but does not provide a clear and particular showing why the skilled artisan would combine the teachings of **Muller** and **Martin** in the specific manner being claimed. It is well-settled that the claimed invention cannot be used as a blueprint to combine references. The mere fact that **Muller** and **Martin** ***could*** be modified (as indicated in the Advisory Action) is not the proper standard for determining obviousness. The mere fact that both **Muller** and **Martin** are "concerned with stacking folded products" does not establish a clear and particular showing of motivation to combine selected elements from the prior art ***in the specific manner being claimed.***

B. The Prior Art Teaches Away From The Claimed Invention.

To determine obviousness, a prior art reference must be considered in its entirety, i.e., as a ***whole***, including portions that would ***lead away*** from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references ***teach away*** from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). In addition, if proposed modifications would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Moreover, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Here, the references themselves ***teach away*** from the alleged combination since they suggest either the use of a non-swinging arm to manipulate the folds (**Muller**), or else, adding rotating brushes to manipulate the folds (**Martin**).

Muller ***teaches away*** from a swinging arm, because its telescopically extensible paper guide 102 is fixed to the frame at bottom and top in a vertical position. The guide means 102 consists of guide lattices or grids 24 and 43 that form a guide channel 44 for the paper web. The guide lattice 24 is "vertically displaceable" on rods 23, and the rods 23 are "secured...to the housing portion 30 of the printer" (col. 4, lines 23-28). *See also*, Fig. 2. In particular, an upper lattice portion 26 comprises member 25, with tubular lower portions 40 that are "supported" on a cross member 110 with a support block 28 at either end; the support blocks 28 slide on hollow member 29 fixed to the housing portion 39 (col. 4, lines 32-37); at the lower end, a lower lattice part 27 has rods 41, sliding in the tubular portions 40, that are "secured" on a cross member 111 that is connected to rod members 34; and **Muller** states that "it is to be noted that the lower lattice portion ... is connected to a frame of the piler means 3" (col. 4, lines 56-63). Thus, the guide means 102 is fixed at top and bottom.

Muller teaches the importance of an exact height of the telescopically extensible paper guide above the paper stack (col. 2, lines 49-52) and the slow telescopic motion of its paper

guide is not at all related to the alternation of folds of the web, but instead follows the increase of the height of the paper stack. **Muller** actually teaches that an arm should ***not*** vary in length *with the folding motion.*

As for **Martin, Martin**'s swing arm 11 is conventional, because **Martin** introduces this element by saying that it is "known per se" (col. 2, line 58). To improve the operation of laying down folds, **Martin** provides "a unit 13 for flattening and retaining flaps on a pile being formed" (col. 2, line 66). At the top of column 4, **Martin** explains, "The swinging unit [i.e., arm 11] alternately distributes the folding flaps to the assemblies 13 for flattening and retaining" and **Martin** goes on to describe the structure of the units 13, which are rotating brushes. At line 17 of column 4 **Martin** states that the units 13 have the function of "pressing down the folds." **Martin**'s units 13 also include a "hammer member 66" that further smoothes and compresses the folds (col. 4, lines 35-55). **Martin** ***teaches away*** from modifying a swinging arm, because it teaches use of a conventional swinging arm and relies entirely on the units 13 for improved folding.

As mentioned in the preceding section, the examiner has the burden to provide a clear and particular showing for why the skilled artisan would combine selected elements from the prior art in the manner claimed. The mere possibility that **Muller** and **Martin** "could" be combined and the mere commonality for "stacking folded products" do not meet the standards for establishing obviousness. Instead, in view of the teachings away, the alleged combination essentially renders the prior art unsatisfactory for its intended purpose, as well as changing the

principle of operation of the prior art being modified. For at least these reasons, the present claimed invention would not have been obvious over the teachings of **Muller** and **Martin**.

C. Even If Muller And Martin Were Combined, The Claimed Invention Is Still Not Achieved.

Independent claims 1 and 6 specifically recite "two different lengths" to be "***in a swing*** of said swing arm." The statement at item 3 in the final Office Action regarding the extension and retraction operation of the arm 102 of **Muller** does not address the specific claimed limitation for the at least two different lengths to be "in a swing" of the swing arm, as recited in independent claims 1 and 6. Indeed, there is no swinging whatsoever for the arm 102 of **Muller**.

Moreover, even if **Muller** were to be combined with **Martin**, for the sake of argument, the present claimed invention would still not be achieved. In such a hypothetical combination (which is improper for the reasons above), the extent of the resulting teachings is only that there is a telescoping arm that may be adjusted in length at the ***vertical position***, to maintain a vertical height/distance from the paper stack – and that such an ***already–telescoped*** arm may swing. This is no better than the conventional art described in the background of the invention section of the present specification. There would still be an undesirable gap between the tip of the arm and the folding location of the paper when the arm is at either extreme of the swing arc.

Basically, the prior art does not teach or suggest, either alone or in combination, any variable extension of the arm (the present claimed "at least two different lengths") ***in the swing*** itself. While the teachings of **Muller** indicates the arm may be extended ***at the vertical position*** to maintain the predetermined distance above paper stack, there is nothing in **Muller**, nor in the

further combination with **Martin**, that would teach or suggest the present claimed "at least two different lengths in a swing of said swing arm."

D. The Dependent Claims Further Distinguish Over The Prior Art.

The dependent claims distinguish over the prior art for at least the reasons that base claims 1 and 6 distinguish over the prior art, as detailed above. In addition, the dependent claims recite further features not taught or suggested by the prior art.

For instance, claim 5 recites an error detection mechanism and control means. **Muller** describes a piler 3 that is vertically movable for changing working heights (see, e.g., col. 4, lines 16-31), but no error detection, no stopping of any swinging arm, and no readjustment of a stacking table. **Martin** describes a vertically movable receiving table 47 that moves down slowly as the pile increases and means for discharging a fully built-up pile (see, e.g., col. 5, line 53 to col. 6, line 45), but no detecting of fold errors then stopping the swing arm and readjusting the vertically movable stacking table.

VIII. CLAIMS APPENDIX

An Appendix containing a copy of the claims involved in this appeal are attached following page 11 of this paper.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.

In view of the Arguments presented above, it is respectfully requested that the final rejection of claims 1 and 3-7 under 35 USC §103 be reversed and that the application be placed into condition for allowance.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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Appendix I – Listing of Claims
Application No.: 09/987,901
Appeal Brief dated April 19, 2005

Listing of Claims:

Claim 1 (Previously Presented): A device for folding a continuous medium, the device comprising:

a swing arm pivotable about an axis at one end of said swing arm, said continuous medium being guided by said swing arm and accordion-folded with equal widths as a result of a swinging operation of said swing arm,

wherein said swing arm includes a telescopic structure varying the length of said swing arm to at least two different lengths in a swing of said swing arm.

Claim 2 (Previously Presented): A device for folding a continuous medium, the device comprising:

a swing arm pivotable about an axis at one end of said swing arm, said continuous medium being guided by said swing arm and accordion-folded with equal widths as a result of a swinging operation of said swing arm,

wherein said swing arm includes a telescopic structure varying the length of said swing arm over a range of a swing of said swing arm, and

wherein said length of said swing arm is minimum at the center of said range and gradually increases towards extreme portions of said range.

Claim 3 (Original): The device as claimed in claim 1, wherein said length of said swing arm is varied such that the tip of the swing arm does not touch the top surface of said folded continuous medium.

Claim 4 (Original): The device as claimed in claim 1, wherein said swing arm includes an arm main body and a sub-arm which is extendable and retractable from the tip of said arm main body.

Claim 5 (Original): The device as claimed in claim 1, further comprising:

a table for receiving said folded continuous medium fed via said swing arm, said table being vertically movable;

an error detection mechanism for detecting any fold error of said continuous medium; and

control means for recovering said device from said fold error in such a manner that, upon detection of a fold error, the swinging of said swing arm is stopped, said table is descended through a predetermined distance and then said table is ascended back to its original level.

Claim 6 (Previously Presented): A continuous medium printing apparatus provided with a device for folding a continuous medium, said device comprising:

a swing arm being pivotable about an axis at one end of said swing arm, said continuous medium being guided by said swing arm and accordion-folded with equal widths as a result of the swinging operation of said swing arm, and

wherein said swing arm includes a telescopic structure such that the length of said swing arm is changed to have at least two different lengths in a swing of said swing arm.

Claim 7 (Previously Presented): The device as claimed in claim 1, further comprising a creasing mechanism, and wherein said continuous medium is creased with equal widths as a result of the swinging operation of said swing arm and an operation of said creasing mechanism.